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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/023,972	12/17/2001	Tushar Ramanlal Shah	RNI-001-5P	9470

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Legal Department
Raza Microelectronics, Inc.
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EXAMINER	
ROBERTS, BRIAN S	

ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 04/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/023,972	SHAH ET AL.	
	Examiner	Art Unit	
	Brian Roberts	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 February 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22,23,25-41,43-46 and 48-56* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22,23,25-41,43-46 and 48-56* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

- Applicant's Amendment filed 02/03/2006 is acknowledged.
- Claims 1-21 have been withdrawn.
- Claims 24, 42, and 47 have been cancelled.
- Claims 54-56 have been added.
- Claims 22-23, 25-41, 43-46, and 48-56 remain pending.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 22-23, 25-29, 45-46 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dirschedl et al. (US 6262994) in view of Rowan et al. (US 6529303).

- In reference to claim 22, 45, 54, 55

In the Figure, Dirschedl et al. teaches a system and method of optimization of data transmission:

- Adapting packet size, modulation, code rate and transmission power level in response to variable environmental conditions.
- Determining the available bandwidth based on the transmission quality where the transmission quality includes the error rate. (column 2-3 lines 59-8)
- Adjusting the packet size based on the error rate (column 3 lines 1-8)

- Forming packet having a variable number of frames where the data part (payload) is between 4 to 250 bytes and where the payload is smaller than or equal to the available payload size. (column 2 lines 29-40)
- Encoding the data utilizing a forward error correction code before transmitting the data (abstract; column 2 lines 50-54)

Dirschedl et al. does not explicitly teach encoding the data using a first error correction code, interleaving the transmission data stream, and encoding the data using a second error correction code before transmitting the data stream..

In Figure 7B, Rowan et al. teaches utilizing a Reed-Solomon encoder (702) to encode a digital data stream utilizing a programmable Reed-Solomon code; a interleaver (704) for interleaving the digital data stream outputted by the Reed-Solomon encoder (702); and encoding the digital data string outputted by the interleaver (704) utilizing a trellis encoder (706) before transmitting the digital data stream. (column 14 line 15 – column 15 line 5)

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the system and method of Dirschedl et al. to include utilizing a Reed-Solomon encoder (702), interleaver (704), and trellis encoder (706) on a digital data stream before transmitting the digital data stream as taught by Rowan et al. because the Reed-Solomon encoder help maintains a very low BER (typ. 10^-12) with low overhead (typ. less than 20%); the interleaver (704) distributes cluster of errors over several blocks of data so that the data is easier recovered; and the trellis encoder helps maintain a low BER rate and recover the transmitted data

- In reference to claim 23, 46

The combination of Dirschedl et al. and Rowan et al. teach a system and method that covers substantially all limitations of the parent claim. Dirschedl et al. further teaches adapting a transmission power level of the first node. (column 2 lines 55-59)

- In reference to claim 25

The combination of Dirschedl et al. and Rowan et al. teach a system and method that covers substantially all limitations of the parent claim. Dirschedl et al. further teaches adapting a modulation level. (column 2 lines 41-49)

- In reference to claim 26

The combination of Dirschedl et al. and Rowan et al. teach a system and method that covers substantially all limitations of the parent claim. Dirschedl et al. further teaches receiving a transmission quality (signal quality) value from a second network node. (Figure)

- In reference to claim 27-28

The combination of Dirschedl et al. and Rowan et al. teach a system and method that covers substantially all limitations of the parent claim. Dirschedl et al. further teaches decreasing/increasing the modulation level depending on whether the signal quality value is less/greater than a desired signal quality value. (column 2 lines 41-49)

- In reference to claim 29, 52

The combination of Dirschedl et al. and Rowan et al. teach a system and method that covers substantially all limitations of the parent claim. Dirschedl et al. further teaches adapting the code rate in the first network node. (column 2 lines 50-54)

- In reference to claim 56

In the Figure, Dirschedl et al. teaches a system and method of optimization of data transmission:

- Adapting packet size, modulation, code rate and transmission power level in response to variable environmental conditions.
- Determining the available bandwidth based on the transmission quality where the transmission quality includes the error rate. (column 2-3 lines 59-8)
- Adjusting the packet size based on the error rate (column 3 lines 1-8)
- Decreasing/increasing the modulation level depending on whether the signal quality value is less/greater than a desired signal quality value. (column 2 lines 41-49
- Forming packet having a variable number of frames where the data part (payload) is between 4 to 250 bytes and where the payload is smaller than or equal to the available payload size. (column 2 lines 29-40)
- Encoding the data utilizing a forward error correction code before transmitting the data (abstract; column 2 lines 50-54)

Dirschedl et al. does not explicitly teach encoding the data using a first error correction code, interleaving the transmission data stream, and encoding the data using a second error correction code before transmitting the data stream.

In Figure 7B, Rowan et al. teaches utilizing a Reed-Solomon encoder (702) to encode a digital data stream utilizing a programmable Reed-Solomon code; a interleaver (704) for interleaving the digital data stream outputted by the Reed-Solomon encoder (702); and encoding the digital data string outputted by the interleaver (704) utilizing a trellis encoder (706) before transmitting the digital data stream. (column 14 line 15 – column 15 line 5)

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the system and method of Dirschedl et al. to include utilizing a Reed-Solomon encoder (702), interleaver (704), and trellis encoder (706) on a digital data stream before transmitting the digital data stream as taught by Rowan et al. because the Reed-Solomon encoder help maintains a very low BER (typ. 10^-12) with low overhead (typ. less than 20%); the interleaver (704) distributes cluster of errors over several blocks of data so that the data is easier recovered; and the trellis encoder helps maintain a low BER rate and recover the transmitted data. Furthermore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the system and method of Dirschedl et al. to include increasing the modulation level of the data when the BER is greater than 10^-12 because Rowan et al. teaches that a BER of 10^-12 is a low desirable BER.

3. Claims 48-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dirschedl et al. (US 6262994) in view of Bark et al. (US 6628956).

- In reference to claim 48

The combination of Dirschedl et al. and Bark et al. teach a system and method that covers substantially all limitations of the parent claim. Dirschedl et al. further teaches adapting a modulation level. (column 2 lines 41-49)

- In reference to claim 49

The combination of Dirschedl et al. and Bark et al. teach a system and method that covers substantially all limitations of the parent claim. Dirschedl et al. further teaches receiving a signal quality value from a second network node. (FIGURE)

- In reference to claim 50-51

The combination of Dirschedl et al. and Bark et al. teach a system and method that covers substantially all limitations of the parent claim. Dirschedl et al. further teaches decreasing/increasing the modulation level depending on whether the signal quality value is less/greater than a desired signal quality value. (column 2 lines 41-49)

4. Claims 30-32, 37-38, and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dirschedl et al. (US 6262994) in view of Rowan et al. (US 6529303), as applied to the parent claims, and further in view of Roy et al. (US 6631130)

- In reference to claim 30 and 53

The combination of Dirschedl et al. and Rowan et al. teach a system and method that covers substantially all limitations of the parent claim.

The combination of Dirschedl et al. and Rowan et al. does not explicitly teach receiving TDM data and packet data of varying priority levels at a node and placing the data in a payload according to the priority level.

Roy et al. teaches receiving a plurality of TDM, ATM and packet data. The TDM frames are SONET frames that inherently contain data columns. The data columns contain packets that can have varying priority levels such as high or low. The ATM data inherently contain an associated priority including high and low. The bandwidth is arbitrated among the ATM and Packet connections while maintaining the TDM timing. (abstract; column 8 lines 23-42)

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the system and method of the combination of Dirschedl et al. and Rowan et al. to include placing the TDM and packet data of varying priority levels in a payload for transmission as taught by Roy et al. because it would allow the transmission of ATM, packet and TDM data while maintaining the TDM timing and allow for arbitration among the ATM and packet data for the remaining available bandwidth according to the priority levels of the data.

- In reference to claim 31-32 and 37-38

The combination of Dirschedl et al. and Rowan et al. teach a system and method that covers substantially all limitations of the parent claim.

The combination of Dirschedl et al. and Rowan et al. does not explicitly teach receiving a plurality of TDM data columns in TDM data frame from a TDM user interface or a plurality of high priority data packets from a packet interface.

In Figures 1A and 1B, Roy et al. teaches receiving an incoming data frame that inherently contains a first and second subset of TDM data from a TDM user interface and receiving a plurality of high priority of data packets from a packet interface. TDM data frames can contain packets of varying priority level.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the system and method of the combination of Dirschedl et al. and Rowan et al. to include receiving TDM data columns containing packets of varying priority levels and receiving a plurality of data packets with varying priorities as taught by Roy et al. because it would allow the transmission of ATM, packet and TDM data while maintaining the TDM timing and allow for arbitration among the ATM and packet data for the remaining available bandwidth according to the priority levels of the data.

5. Claims 33-36, 39-42 and 43-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dirschedl et al. (US 6262994) in view of Rowan et al. (US 6529303) in view of Roy et al. (US 6631130), as applied to the parent claim, and further in view of Chang (US 5867502).

- In reference to claim 33-36, 39-42 and 43-44

The combination of Dirschedl et al., Rowan et al., and Roy et al. teach a system and method that covers substantially all limitations of the parent claim.

The combination of Dirschedl et al., Rowan et al., and Roy et al. does not teach dropping or through data columns in a TDM network.

Chang teaches that in SONET, data columns are transmitted through the network until the columns reach a destination node. Data columns that are at the destination node are commonly referred to as DROP data columns while data columns that have yet to reach their destination node are transmitted through the node and are commonly referred to as THROUGH data columns. Packet data inherently originates from a packet user interface and TDM data inherently originates from a TDM user interface. Data received at a node from a TDM user interface for transmission through the SONET is commonly referred to as ADD data columns. (abstract)

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the system and method of the combination of Dirschedl et al., Rowan et al., and Roy et al. to include sorting between DROP and THROUGH data as taught by Chang because it would allow data in a SONET ring that is not to be transmitted over the wireless link to be passed through while allowing the first node to separate data that is suppose to be transmitted over the wireless link.

Response to Arguments

6. Applicant's arguments with respect to claims 22 and 45 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure are:

- Senda et al. (US 6738949) teaches a error correction circuit and method that includes a Reed-Solomon encoder, interleaver, and Trellis encoder.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Roberts whose telephone number is (571) 272-3095. The examiner can normally be reached on M-F 10:00-7:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BSR
04/07/2006

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